# The Bulletin
## OF THE
# South Indian Medical Union.

Vol. III. | AUGUST 1931. | No. 8.

CONTENTS.

PAGE.

1, Editorial;
- (*a*) Wanted—A Policy ... 3
- (*b*) False Oracles—II ... 5

2. (*a*) Honorary Medical Officers in Madras ... 6
- (*b*) Honorary Service in Government Medical Institutions ... 8

3. Correspondence:
- (*a*) The Designation of Honorary Medical Men ... 9
- (*b*) Abolition of the Rural Sanitation Campaign ... 10
- (*c*) Honorary Service in Government Medical Institutions ... 10
- (*d*) Retrenchment in Madras ... 11
- (*e*) Honorary Service ... 12

5. Associations and Conferences:
- (*a*) Andhra Ayurveda Conference ... 12
- (*b*) Madras Medical College Association ... 14
- (*c*) The Malabar District Medical Association ... 15

5. Ultra Violet Radiation:
- By V. C. Sudarsanam, L.M.P. ... 16

6. Two Domestic Pests:
- By Capt. R. C. Toyle, L.M.S. ... 23

PUBLICITY SECTION.

## NOTICE.

1. The Union does not accept any responsibility for the views and statements of the contributors as published in the Bulletin; all manuscripts, books, drugs, and other appliances for review and letters intended for publication must bear the name and address of the author, not necessarily for publication.

2. Copy, cuts and blocks for advertisement should reach this Office at least before the 15th of the month of issue. Advertising rates will be supplied on application. Every effort will be made to accommodate advertisers' request for suitable space, position and proper display of advertisements but *particular positions cannot be guaranteed.* All advertisements are accepted subject to the above.

3. Remittances should be made by crossed cheques, registered letter or money order, payable to the *Publicity Section*, South Indian Medical Union.

4. Medical Students and those *interested* in Medical Relief will be placed on the complimentary mailing list of the BULLETIN on application to the Publicity Section.

Address all communications for:—

**(1) Publicity Section—51, Poonamallee Road, Kilpauk, Madras.**

**(2) General Section—100, Poonamallee Road, Vepery, Madras.**

# Our Country Doctor.

WE sing the praise of authors, of warriors and of men,
Who've climbed to heights of glory by their deeds of sword or pen;
We praise the bard, the statesman, the sportsman and the man
Who holds the fate of nations in the hollow of his hand.

BUT there's perhaps another who has ne'er received his due,
Who's spent long years of service in his work for me and you;
And though his deeds may never be proclaimed from shore to shore,
In fulfilling Christ's own mission other men have done no more.

NO midnight call that came to him e'er fell on deafened ear,
The steady voice that answered seemed to drive away all fear;
No night too wild, no road too long, naught seemed to bar his way,
His aim was "Render service without one thought of pay."

FOR fifty years he's labored in a field of pain and strife,
As he travelled from youth's morning to the eventide of life;
He has eased the pain of thousands, he's rejoiced with us when glad,
And when death came to our household his heart too was sick and sad,

AND we folks who do so little in behalf of humankind,
If we'd view his service record, one great lesson we might find;
The man who's in the limelight truly may be great and fine,
But we'll match our country doctor's with his record anytime.

MRS. ANNA FARRELL,
*Farmers' Elevator Guide*, July, 1929.

Where else can you meet him than in the Independent Medical Profession?

BULLETIN

OF THE

SOUTH INDIAN MEDICAL UNION.

AUGUST 1931.

We regret very much to record the recent death of Major-General F. H. G. HUTCHINSON, I.M.S., a former Surgeon-General of Madras.

## Wanted—A Policy

It was primarily with a view to enhance the facilities and the efficiency of medical relief in the Presidency that that talented statesman, the late Raja of Panagal, invoked and enlisted the services of men from the independent medical profession in the working of hospitals. The Raja Saheb saw with unerring vision and insight that it was next to impossible to provide adequate medical aid to the sick and the suffering of the Province by a Service remunerated on the scales then existing from the funds of the State. He hit upon the plan, so familiar to the people of western countries, of employing in State hospitals, in an honorary capacity, of competent and qualified men drawn from among the private practitioners. The scheme met with qualified approval at the time, and, not only that, it proved pre-eminently successful too, in a short while. There was, of course, some opposition to be faced from vested interests, but even the latter had to acknowledge in course of time that the honorary men were a real acquisition and that they represented a side of the profession without whose whole-hearted co-operation the problem of medical relief of the needy and the stricken could not be taken on hand and solved aright. The scheme was liberalised, therefore, so as to bring within its beneficent influence not merely the hospitals in the city as was the case at first but also the hospitals in the mofussil. Unfortunately, however, the scheme lacked a definite plan and programme, with the result that much was left to the discretion of the individual Surgeon General and the individual Minister in charge of the Medical portfolio. This has led to various anomalies to the correction of which attention ought to be directed forthwith.

We shall refer to but one of these anomalies in the course of this article.

In the interests of efficient medical relief three things ought to be paid special attention to by the Government. First, there is the hospital work which calls for the employment in its behalf of the best medical talents available in the Province. Once it is granted that the requisite staff for the efficient conduct of the various departments in hospitals cannot be found from among the paid service alone, it becomes the duty of the Government to avail themselves of as many of the able and capable men from the independent profession as are necessary and as offer themselves to work in an honorary capacity. This is being done to some extent at least now, although, with a little more of the spirit of sympathy and statesmanship, much more could be accomplished in this direction.

Not so is the case with respect to medical research and medical education. It is, we fear, unwisely assumed by the Government that in these spheres only the paid servicemen are capable of acquitting themselves creditably. No more erroneous assumption could even be conceived of. The record of original research to the credit of servicemen is, to put it mildly, next to nothing. In spite of all the facilities for clinical investigation and laboratory experimentation they have at their disposal, they have, in recent years at any rate, produced nothing of which they could individually or collectively be proud. On the other hand, some of the most brilliant men belonging to the independent medical profession have shown signs of great promise in this sphere —promise which, denied as they are of facilities for unfettered and carefree research and investigation, has failed to reach fulfilment. Why not throw open to these men the opportunities and advantages which servicemen can freely command and do not exploit, and thus pave the way for healthy contributions to the sum of knowledge in the various branches of medicine? Talent, wherever found, must be encouraged, and in a country like ours, where the vast bulk of the people have various types of ailments and agonies to go through from year to year, much can be accomplished if the genius for research and study, investigation and experiment, could be given the fillip it needs for practical achievement.

Thirdly, the colleges and schools that provide medical education should have on their staff men of the widest knowledge and experience in the subjects that are taught. Among the private medical practitioners are several with the gift of the teacher in them—men who would be willing and prepared to give their best to the youth if only they are given opportunities to help in the cause of medical education. If it is not improper to engage honorary men to be in charge of special branches of treatment in hospitals, what is there that could be taken objection to in indenting upon their services on behalf of educational institutions as well?

These and allied questions must be considered by the Government in the light of the requirements of the times. Apart from the fact that, in the interests of the general public, the Government must make it possible for the private practitioner and the serviceman to work harmoniously and with single-minded devotion in a common cause, these are days when the question of economy cannot be ignored or brushed aside. Every proposal that counts for saving without loss of efficiency ought to be welcomed and put into effect. We are wholly opposed to the sort of retrenchment that is being suggested nowadays. To deprive the hospitals of much-needed equipments by effecting cuts in the indents therefor is a definite step

in retrogression; its reaction is bound to be disastrous in the *short* run. So also is the case with the proposal for depriving colleges and schools of the none too plentiful medical literature now supplied to them. Economy and retrenchment should be looked for elsewhere, and we have referred to it in our columns before. Medicine is a growing science, and almost everyday something new and helpful is being discovered and placed before the public through the columns of books and periodicals published in the interests of the profession. To discontinue the supply of these journals to educational institutions in the name of economy cannot be considered a move in the right direction. Not only will instruction be starved of its content thereby, the authorities will be actively encouraging the manufacture of a set of Rip Van Winkles to deal with the question of medical relief in days to come. On the other hand, retrenchment of the right type lies in recruiting the aid of the private practitioner wherever possible in the discharge of the work the department has to fulfil, and we do not think such recruitment is either difficult or impracticable if only the issue is approached from the right standpoint.

Anyway, there is now a Committee at work examining the whole question of Honorary Service in the Medical department, and it is hoped that this Committee will explore all the possibilities involved and suggest ways and means which, while ensuring the elimination of much of the waste that now goes on by reason of nebulous and unco-ordinated policies, will be universally welcomed by the public at large.

---

## False Oracles—II.

When we commented in our last issue on False Oracles we hardly expected to have occasion to deal on the same so soon. The latest recruit to the ranks of those wiseacres who animadvert on the honorary system of staffing of hospitals is Mr. C. Basu Dev M.L.C., whose letter to the press we publish elsewhere.

We do not know how to take him, whether as a local example of that great Iberian knight immortalised by Cervantes or as a living illustration of the advertisement one sees at places where instruments of music are retailed; probably as the latter, as we find that the only relevant but wrong statement trotted out by him has been the stock argument of everyone of the local antagonists. It has been propounded with glee by the local service organ. The amount of agitation that is now going on in those western countries, where to placate the socialist agitator, attempts have been made to introduce a paid medical service and the dissatisfaction of the Public—a more educated and a more insistent public than here—may well be gauged by a peep into the medical and lay press of those countries.

We do not propose here to discuss the merits or the demerits of the honorary system. We have dealt with it exhaustively in our previous issues. We have found it working satisfactorily, not only in our own sphere, but in practically every other walk of life. We have no complaint against Mr. Basu Dev for the views he holds. They are not even original in this presidency, and are found whenever and wherever vested interests feel that their monopoly is not likely to be left unassailed.

Mr. Basu Dev admittedly has no faith in honorary work. He fears that the poor will not be attended to, that the honorary system savours of condescension and charity. It was Major-General Huchinson, a former Surgeon-General of Madras, who said that "it is a psychological truth that

those who accuse others of any motive are themselves guilty of the same." We wonder how far it is true in the present case. We understand that Mr. Basu Dev is a nominated member of the local Legislative Council to represent labour interests. We find him leading a deputation in the interests of labour. We are told that he is or wants to be actively associated with labour organisations. Our conception all along has been that he has been acting in an honorary capacity. We hope we are not wrong. We do know, however, that the large army of public workers in this province, from the member of the humble Punchayet to the members of the Legislative Council, are *honorary* workers working for the good of the country and without expecting any material remuneration. Taking two instances in the party to which Mr. Basu Dev belongs, let us remind him that his chief was till lately the honorary president of a District Board. His party organ is directed by honorary officers. We can, if necessary, quote many more instances not only from the political sphere but from all walks of life. We wonder what they and especially his colleagues in the Legislative Council have to say of his statement that honorary work savours of condescension and charity. We are afraid that they would hardly thank him for this novel exposition of the spirit underlying honorary work.

We, in our profession, are accustomed to offer our services free, and without any of that feeling attributed to us by him. May we be permitted to offer him an advice " not to rush in where even the angel fears to tread."

---

## Honorary Medical Officers in Madras.

(*Swarajya.*)

The manner in which the system of honorary medical officers is being worked in Government hospitals calls for review in the light of the experience so far gained. There can be no ambiguity about the motive underlying the system. It is intended primarily to bring economy into the medical administration, and to provide extra medical benefit to patients without incurring extra financial liabilities. It is obvious, if the system is to yield the results expected of it, two essential conditions ought to be fulfilled. The first is that the honorary medical officers appointed to any particular hospital should not be regarded as an embellishment, but should be utilised to the utmost extent allowed by opportunity, to replace and take over the work of the regular paid staff. The appointment of a paid medical officer to a hospital at any time when an honorary officer of no less competence is already available therein to shoulder the same work and responsibility, militates against the whole object of the system of honorary appointments, and tends to reduce it to a nullity. The second of the two conditions to which we have referred, follows as a corollary from the first. The mere appointment of honorary doctors will not suffice. It is in the highest degree necessary that after appointment, the fullest use should be made of the talent and capacity of the honoraries, and every possible facility should be offered to them to feel thoroughly at home in the discharge of their work. Above all, the slightest symptom of any invidious distinction in status and treatment as between the paid and honorary ranks of hospital staffs, must be scrupulously avoided and guarded against. In Bombay, where the system of honorary medical appointments has attained a greater degree of success than elsewhere, the foremost of the hospitals are run with but one or two paid medical officers, almost the entire needs of the institutions being met by the services of honorary men. But in Madras, unfortunately, thanks to the niggardly

spirit in which the innovation of honorary doctors has been worked out in practice, there has been little or no curtailment in the ranks of the regular paid staffs of the hospitals. The object of reducing expenditure on the medical budget which is presumably one of the aims which the Government had in view in appointing honorary medical officers, has been almost totally defeated hitherto in this presidency. The root of the mischief lies in the fact, that the honorary officers have come to be regarded as supernumeraries. Hence they are not allowed to feel that they fill a necessary position. What is wanted is a radical revision in the very spirit governing the use made of the services of honorary medical officers. The honoraries should be given responsible work such as, for example, teaching work in the schools attached to the hospitals where they are posted. As things stand, they are not asked even to sit on the Medical Board or partake in discussions concerning the administration of medical relief. It is inconceivable why the services of specialists among honorary medical officers should not be availed of, at least in the city, to a greater degree than has been hitherto attempted. They should be given special facilities to work up clinics of their own, and appreciation of really good men should be readily forthcoming. We would also suggest that when an honorary medical officer happens to have made special research and study in a particular branch of medicine, he should be given multiple appointments for that particular branch in the various medical institutions of the city. The present practice of transferring honorary medical officers from one hospital to another without consulting them is open to grave objection since it is liable to disturb their interest in any special research or clinical work in which they may be engaged. It is obvious that the potentiality for public benefit implied in the appointment of honorary medical officers has been taken advantage of till now to a very imperfect extent. The Committee that is now sitting to examine the system will do well to explore all the sources of information available from persons actually conversant with its practical working with a view to evolve changes capable of converting it into a really helpful asset to the public and to the State.

If, as we suggested, the ideal of the progressive replacement of paid medical officers by honorary physicians and surgeons is to be realised in our hospitals, there is need for greater vigilance in the selection of candidates to serve in an honorary capacity. We mean no reflection on the quality and attainments of those who have been hitherto chosen as honorary doctors. They have given, on the whole, a very good account of themselves. But this result has been due largely to a series of happy accidents rather than to any systematic care bestowed in the selection of the officers. It is not safe, however, to allow the interests of so vital a branch of the administration as medical relief depend continuously on the uncertain chances of accident. Future appointments of honorary medical officers should hence be regulated in accordance with some fixed principles of selection arrived at after due deliberation by responsible and competent members of the profession. We may however suggest tentatively that an inventory should be taken of the requirements in skill and knowledge of every medical institution both in the city and elsewhere, and so far as may be possible, appointments to the honorary section be reserved only to those possessing special qualifications and training to fulfil those requirements ably and with adequacy. Efficiency and merit should be the guiding factors in the choice, and extraneous considerations tending to show special favouritism to less

qualified persons, such as for example communal partiality, should be scrupulously eschewed. Retired and superannuated medical officers should on no account be brought back to responsible positions (for which they had presumably been already declared unfit on the score of age or other sufficient reason) through the medium of honorary appointments. It will be a good innovation if a scheme is devised for the promotion of honorary medical officers from junior to senior posts in a graded system on the basis of proved ability and worth. The paid ranks in medical service are provided with abundant facilities for acquiring special training and knowledge, both in India and abroad, in the shape of generous concessions such as scholarships, study leave, etc. There is no reason why similar opportunities should not be provided to honorary medical officers whose technical equipment should be a matter of no less concern to the Department, subject, of course, in each individual case to a contract for the continuance of honorary service for a specified period after the receipt of special training. In the case of hospitals as with other institutions, excellence comes out of the pride of association born from the personal interest of the staff. It is the bane of the medical administration of the present day that nothing is done to foster the vitalising influence of the personal element in the conduct of hospitals. Unselfish attachment to the cause of medical relief is the very foundation of the undertaking by which honorary medical officers consent to serve in hospitals without remuneration. If the latter are to give of their best to the institutions wherein they serve, the least that the Department owes to them is to allow them to cultivate a local attachment to their work without danger of executive disturbance. They should be allowed to build up the reputations of the hospitals with which they are associated by dint of steady and continuous interest and work. Immunity from quixotic transfers superimposed from the office of the Surgeon-General without reference to the transferee's wish or the convenience of the institution wherein he has been working, is both a modest and a legitimate return which can be expected from the Department for the sacrifice and public spirit involved in the offer of honorary service by a medical officer. Let the most vigorous scrutiny be exercised in the acceptance of such offers of service, but once accepted, there ought to be some permanence of status and tenure assured to the honorary medical officer. In Madras City, at any rate, there is abundance of talent available for employment as honorary medical officers in hospitals. Now that the Retrenchment Committee is sitting, may we suggest to the Committee that the most useful line of investigation which it can pursue in the interest of economy would be to examine the extent to which the costly machinery of the paid medical service can be instantaneously replaced with honorary medical officers in the conduct of City hospitals?

---

***(The other side of the Shield.)***

## Honorary Service in Government Medical Institutions.

Sir,—I offer no apology for intruding on the attention of the public through your valuable columns, for the subject of Honorary Medical Service in Government Hospitals is one which has affected and which will affect adversely the interests of the masses. Complaints of indifference and partial treatment have been many and continuous. With many honourable exceptions the medical men in charge of hospitals have often, not unnaturally devoted greater attention to the paying patient than to the large number of poor men, women and children who

sought medical relief and to whom it was their first duty to attend, and the Government had on many occasions, to issue instructions insisting upon strict performance of their duty. But, unfortunately for the poor man, economy and the ever swelling number of medical men necessitated about a decade back the introduction of Honorary Service in the cadre of House Surgeons and Physicians. Gradually, perhaps to lessen the pressure of work, Honorary Surgeons and Physicians were appointed to hospitals and it was always understood that the paid man was responsible for the proper conduct of work. But, now, the Government, I understand, is considering the advisability of further extending this scheme of honorary service and has as a matter of fact made one or two appointments of honorary men to be in independent charge of important departments of medical science.

Medical men seek admission into the honorary service not so much for love as for extending their influence and practice and would therefore naturally be discriminating between a paying patient who can afford to consult them privately and the one who cannot. The men have a right to expect impartial and proper medical attention and any suggestion of condescension or charity will add insult to injury. England and other western countries where honorary service has been in vogue for generations past are now abandoning it,—substituting paid men even in spite of the fact that the best medical men are to be found among the ranks of private practitioners. The Government of the west and their people realise and demand medical relief as of right and would not allow any longer the suggestion of charity. But we in Madras are now thinking of adopting the policy which was tried and found wanting in the west, and that, in the face of the fact, that the best medical talent available in the province is to be found among the men in service. I understand the Government have appointed a Committee to consider the advisability of extending the scheme of honorary service and that their recommendations are awaited. Meanwhile the Government seem to be impatient and have made one or two honorary appointments to important departments. I have great respect for the men in charge of Public Health in this province, but I am constrained to make these observations, because I feel that the interests of the masses will be very seriously affected, and I am also anxious to see that the idea of condescension or charity is once for all banished and the sense of duty and right is established. And this can be done not by introduction of honorary service but by tightening the control over the paid men.

C. Basu Dev, M.L.C.,

In the *Hindu*, *1-8-31*.

---

## CORRESPONDENCE.

### The Designation of Honorary Medical Men.

Sir,

I find from the Civil Quarterly Medical Lists and from some of the Hospital records that Honorary Physicians and Surgeons working in the several medical institutions of the Presidency are given the classical and classified designations such as Honorary Physician, Honorary Surgeon, Honorary Asst. Surgeon, Honorary Sub-Asst. Surgeon. I am at a loss to know the rationale of these various caste-marks in the medical profession even among those Independent Medical Practitioners who are doing honorary work, courting some voluntary sacrifice for the sake of the State and as a noble work of charity. I remember to have read a G. O. stating that the designation "Sub-Asst. Surgeon" denotes a particular grade *in Government Service.* Though several clashes have occurred between medical officers and local authorities on the use of these meaningless terms, it is accepted to be some grade in

government service. The terms Asst. Surgeons and Sub-Asst. Surgeons are not qualifications, but are merely grades of service, is evident from the fact—if any proof is required—that men having L.M.P and similar qualifications occupy the position of Asst. Surgeons and that some medical men having L.M. & S. and similar qualifications are appointed as Sub-Asst. Surgeons. I know also of instances of some medical men of the L.M.P qualification had been promoted to the grade of Civil Surgencies in Burma. Hence it is clear that qualifications and grades of service are not identical nor can one be used for the other. It is true that the lay public often commit the mistake of using the terms indiscriminately. When the Government once cleared this doubt by announcing that only men in service are called by the designation of Sub-Asst. Surgeons, I wonder how they are now justified in using the designations of Honorary Asst. Surgeons and Honorary Sub-Asst. Surgeons to men who are Independent Medical Practitioners. I would like to know whether these practitioners are classified as Government servants in its strict sense, simply because they volunteer their services to the Government Medical Institutions. It is high time such invidious distinctions are removed, fellow medical men are treated on equal terms and that petty mindedness give room to liberal views and that all medical men are treated on honourable terms. The only terms that should be used consistent with dignity and decency appear to be Honorary Physicians and Honorary Surgeons, whatever the qualifications of the incumbents be.

V. KRISHNA MENON, L.M.P.

CALICUT,

*20th August 1931.*

## Abolition of the Rural Sanitation Campaign

Sir,—The Retrenchment Committee has proposed to abolish the Rural Sanitation Campaign, attached to the office of the Director of Public Health, Madras. I wish to point out that it is the most ill-advised step they could have taken.

The Rural Sanitation Campaign is the most useful of sections in the Public Health Department. More appalling than the appalling poverty of the masses is the death and disease, which is staring them in their faces. Much good is being done by the campaign by way of propaganda and treatment. I know how the poor ryots used to flock to the shows, attracted by the whirring sound of the cinema projector, curious and anxious to learn some facts about general sanitary problems. Splendid work is being done by a Rural Sanitation Unit at Madura. The Chief Minister recently opened one at Coimbatore, fully realising the potentialities of the scheme.

The Government should think twice before they do away with this Department. The work was started by the Rockfeller Foundation and the fully developed Department was handed over to the Madras Government. It is giving the Rockfeller Foundation scant thanks for their pioneer endeavours if the Department were abolished a few years after they left India's shores.

The slogan of the day is " Better the lot of the peasants". Everybody is greatly concerned about them, from Mahatma Gandhi to the freshman of the University. A Department which does some good to rate-payers deserve retention, surely.

K. V. A.

## Honorary Service in Govt. Medical Institutions.

Sir,—Mr. Basu Dev, an M. L. C., writes in " The Hindu ' of the 1st instant under the Heading given above, that in Government Medical institutions, the officers in charge, with many honourable exceptions, devote

greater attention to paying patients than to the poor; and that in spite of stringent instructions issued by the Government, to the medical officers, to pay equal attention to all patients that seek treatment in the hospitals, matters have not improved. He fears that if honoraries are appointed in place of the paid medical officers in charge they would also pay more attention to paying patients than to others and he, therefore, thinks that the system of honorary appointment, for the extension of which a Committee appointed by Government is now sitting, should be done away with. Of course he has no personal knowledge that honoraries are devoting more attention to paying patients, neglecting the poor, for the simple reason that no honoraries have been appointed in charge of hospitals and in one or two instances in which such appointments are said to have been made, he could not have any knowledge, as the appointments themselves are said to have been made very recently, granting that to be fact. He fears that because the private practitioners accept the honorary appointments, not on philanthropic motives, they would naturally pay more attention to patients that pay them than to others. Are the M. L. Cs. to get themselves elected on philanthropic motives? Why do they fight for and get travelling and daily allowances? And I wish to know that between the paid officers being partial to paying patients and honorary officers being partial to them, which is better? If the poor patients are not benefited by either the paid or honorary officers, the Government at least is benefited by the honoraries as the money spent on the paid officer is saved. Are the paid officers and honoraries quite different species of humanity? If many honourable exceptions are found among the paid officers, can there not be exceptions among honoraries? The paid officers whose tenure of office in a particular place is not certain, supplement their pay as much as possible during their stay in a particular place, by affording better treatment to paying patients. In the case of honoraries, however, as they are expected to stay in the places very long and wish to become popular among all classes of inhabitants poor and rich of the places and secure their goodwill, to earn their livelihood, cannot, in their interests, afford to neglect poor patients. Though treatment of poor patients is not expected to be profitable to the honoraries directly, it will, to a great extent, be profitable to them indirectly and give them opportunities to gain experience so that the interests of the poor patients are safer with the honoraries than with the paid officers. Thus the entertainment of honoraries is therefore profitable not only to Government but to the public—rich and poor; and their condemnation, on theoretical ground, by the M. L. C. is neither correct nor justifiable.

M. S. KRISHNAMURTHI AIYAR.

---

## Retrenchment in Madras.

Sir,—The Madras Government and its Retrenchment committee are now said to be busy devising ways and means of retrenchment. In this connection we should like to point out how the axe is aimed at the poor ministerial and menial staff allowing the top-heavy administration to continue.

Taking the working of the Government General Hospital, there are three Presidency Surgeons and three Physicians, each having three Assistants and all these Surgeons are paid an allowance of Rs. 200 and their Assistants Rs. 125. These Surgeons are said to be Professors of the same subject, Surgery. This is nothing but a device to make each Surgeon and his Assistant to enjoy additional allowances.

One of these Surgeons can be made the sole professer of Surgery and the additional allowances can thus be dispensed with.

Considering the working of the King Institute, the staff there is decidedly too much. Members of the gazetted staff of the King Institute alone are more than a dozen. This can very well be reduced. Instead of maintaining two institutions like the King Institute and the Chemical Examiner's office both of which require enormous amount of money on the laboratories they can be amalgamated. The public Analyst's post is nothing but a waste. Nowhere in India there is a separate Public Analyst for the working of the Food Adultration Act. The Act has been in force for a much longer period in the provinces of Bombay, Bengal, Punjab and Central Provinces. But none of them have found any necessity for an additional establishment other than their respective Chemical Examiners. In such provinces only the Chemical Analysers to Government are the Public Analysts for the purposes of the Act. Why should Madras alone waste nothing less than Rs. 35,000 per annum on the salary of the Public Analyst and his laboratory? The present Public Analyst was brought only on a contract for three years which was subsquently extended by two more years. During all the five years of his stay only last year his annual report was published which positively shows that there is no work to justify the existence of an additional Public Analyst. Cannot the Government abolish this department and amalgamate it with the Chemical Examiner's Office and supplement the staff of the Chemical Examiner with one or more assistants? This method not only makes the Government save about Rs. 25,000 per annum in the shape of the pay of the Public Analyst, but an additional sum of about Rs. 30,000 per annum can be saved in the matter of maintaining an additional laboratory. A sum of nothing less than Rs. 55.000 other than the leave allowance for six months and the passage money for every year can be saved.

P. S. RAMAKRISHNAN, M.A.,

---

### The Honorary Service.

Dear sir,—I read with interest Mr. Basu Dev M. L. C.'s letter in the Hindu regarding Honorary medical officers. Mr. Basu Dev, though himself an honorary secretary of a Labour Union condemns honorary service, as he thinks the service given is in a spirit of charity and condesencion. How does he justifiy his own doings. Even if he considers that the *ten rupees* a day, off and on, as adequate remuneration for his legislative council services, does he want the public to assume that it is in a spirit of condesencion and charity that he works for Labour? If not, what emoluments does he get for interesting himself on their behalf?

ANOTHER HONORARY WORKER.

7-8-31.

---

## ASSOCIATIONS AND CONFERENCES.

### Andhra Ayurveda Conference.

Dr. A. Lakshmipathi presided at the Eleventh Andhra Provincial Ayurvedic Conference held on August 15th at Rajahmundry. The following is an extract of his address :

The All-India Ayurveda Mahammandal and our Conference have been responsible for some institutions awarding diplomas to qualified Ayurvedic students. In addition to these, there are bogus institutions making money by selling false degrees and diplomas to unqualified people and thereby deceiving the ignorant masses. On one side there are allopathetic practitioners and on the other side there are Ayurvedic physicians, who believe

that the Science of Orthodox Ayurveda is complete in itself and so nothing which is not in the Shastras is worthy of adoption. Between these two, ignorant masses of people are unable to know the truth.

### CHEAPNESS OF AYURVEDIC TREATMENT.

The Local Boards and Municipalities are running Ayurvedic dispensaries at their own cost. But considering the pay of the physicians which is now fairly high, and the cost of the medicines, house-rents, and other incidental expenses, their institutions are also likely to approach their foreign rivals. Unless the Ayurvedic physicians are able to make use of ginger, pepper and other products that are available in the local markets, and the useful herbs that are available in and outside limits of every village, their Ayurvedic Free Dispensaries will also in the long run be costly as their allopathic competitors. Having passed S.S.L.C. Examination and after undergoing a course of four years by paying a large sum of Rs. 60 to 120 as school fees it is hard for the Ayurvedic physician to be asked to work on a low pay while his brother who practises the rival system is paid a fat pay. Moreover it is hard for men who are used to use the palatial buildings in the city, to settle in a far off village where even good water-supply is not available. At the rate of one physician per village, we require one lakh of physicians in this Presidency. Can the Government institutions by themselves produce all the number required for us?

In spite of the unemployment problem there is a great need for medical school in Andhra Desa. Last year from the four districts of the two Godavaries, Krishna, and Guntur, there were 60 applications for admission. But only two seats are reserved for each of 11 Andhra districts. There were 22 seats available. Of these only 8 could be allowed four these four districts, then leaving about 50 students altogether without admission into the school. This shows that there is a great need for establishing medical schools in the heart of the Andhra country. Moreover the education may be given in the mother tongue. I hope our Andhra leaders and the Andhra University will take up this question in right earnest.

### HONORARY SERVICES.

In India the Ayurvedic Physician, who belongs to the village in which he practises, depends upon the people of the village for his support and he is always in a mood to please them, and tries to get recognition from them. In addition to the public support he possesses some landed property or some other profession which makes his medical profession more or less an auxiliary profession. In many places there are Inams given to the physicians for the services rendered by him to the community as a physician. In the morning about 2 or 3 hours are devoted for medical profession and the rest of the hours are devoted to other profession which really brings him a livelihood. The modern physician comes to some far of village for a living at a distance and depends upon his own master who also is living at a distance. He does not care very much for these poor villagers because he does not depend upon them for his support. The honorary system of employing physicians and surgeons in the big hospitals has now been started in cities and district headquarters. But even this will not be successful. The physician depends mainly upon some other income to at least a certain extent. Strictly speaking the Science of Ayurveda should be taught to every man and woman to enable them to lead a strong, long, healthy and happy life. It is not much for a student to know the science relating to his own health when he has time to study history,

geography, and other subjects which really do not concern his own health and welfare as largely as does the science of medicine. In early India the education of boys and girls included a course of study in medicine from the 7th year upwards. From the 7th to 16th subjects are taught regarding the elementary education. This is necessary for them in order to know how to lead a healthy life and acquiring good happiness. From 17th to 20th, *i.e.*, in the college course he should be taught generally principles of medicine and also of surgery as optional subjects such as zoology and geology. This makes him fit to practise as a physician in the villages.

In the medical colleges the student above the age of 21 should have facilities for a thorough training in the medical profession for surgical and other special work and for conducting research work. By this system of education every man has knowledge enough to protect himself from many diseases and he need not run to the physician for simple ailments.

### Mere Drugging is not Ayurvedic Treatment.

Treatment consists of administration of external applications, internal medicines, and the use of surgical instruments. The external application includes abyanga or oil baths, Turkish baths and the application of formentations and massage, etc.

All other methods of treatment have disappeared leaving only a big store of medicines. Now-a-days, medical treatment and health propaganda is done in this country by people who derive their knowledge from text books written 6 thousand miles away and possessing information which in most cases is unsuitable to our climatic conditions and habits.

Susruta says that a man who takes regular physical exercises every day is not troubled by any disease just as a lion is not troubled by minor animals. How many great physicians of to-day use the system of physical culture in their daily practice in the treatment of diseases?

---

## Madras Medical College Assocation.

The Madras Medical College Association gave an enthusiastic reception to the new graduates of the college on the 7th August at the Museum Theatre, Egmore, Lieut.-Col. C. A. F. Hingston presiding. Col. Hingston expressed his great pleasure to be present at the function and thanked them for having allowed him the great privilege to be associated with the reception especially as this year would be the last when he would be with them. He then called on Dr. A. Lakshmanaswami Mudaliar to deliver his address to the graduates.

After giving a few reminiscences of his college days, the speaker congratulated the graduates on the great and glorious future that lay before them and the unique privilege they had in listening to a convocation address delivered by a distinguished lady educationist. The Madras University, he said, was the first University in the British Empire to have this honour. Madras was the first province to give women their franchise. He could not give them better advice or pay a greater tribute to their profession than Miss McDougall had done in her remarkable address. The medical profession was the noblest of all professions. One great defect in the profession in India was that it was not sufficiently assertive and vocal. Further they should try to bring more unity and harmony among their members. A harmonious spirit of co-operation would be the bulwark of their profession. Time and again a criticism was levelled that the members of the profession here had not contributed to the realm of medical

research. If they studied the life and work of the great men who had made researches, they would see that it was the youth of the profession that had really done the best part of the medical research.

Proceeding the speaker emphasised the point that life was one long struggle and that they must take life as it was and with confidence and courage face the world. He was not saying this to the geniuses as Victor Hugo stated genius was promonetary which stretched into infinity. To the average man, he would say that success in examination did not mean that he would be as great a success in after life. What was indeed was the spirit of inquiry and confidence. They should remember the fact that wisdom had to be gained while knowledge could be stored at any time. "I appeal to you" said the speaker in conclusion "to keep before you the high qualities of your university education whatever life you may choose. The recollection of great thoughts, the conception of great ideas, the gratification of great achievements and the consolation of failures have imbued and fitted you well to face the vicissitudes of fortune and the battle of life. These things will always stand in good stead and you will realise that you are the best architect of your destiny."

---

## The Malabar District Medical Association.

A meeting of the Malabar District Medical Association was held on 22nd August 1931 in the Paran Hall, Calicut, under the presidency of Dr. A. P. Balaram, the Vice-President of the Association. Among those present were Drs. A. P. Balaram, N. Achuthan M B., B.S,, K. Viswanathan, L.M.S. Muncipal Health Officer, J. Herbert, Asst D. H. O, J. J. Joseph, Chief Leprosy Officer, Mrs J. Herbert, V. I. Raman, M.R.C.S, L.R.C.P. &c., P. Narayanan Nair (Tirur), M. Damodara Menon, V. Narayana Kurup (Tamaracheri), A. Balakrishnan Nair, P. K. Nambiar, P. M. Sreedharan, A. Gopalan Nambiar, K. S. Menon (Areacode), and V. Krishna Menon.

Dr. (Miss) V. Janaki, who had promised to read a paper on "Child Welfare" was unavoidably absent. Her letter was read and recorded. It was decided to postpone the lecture for the next meeting.

Dr. V. Krishna Menon next moved the following resolution :—

"This Association while thanking Dr. M. R. Guruswamy Mudaliar for opening a new avenue for the L. M. Ps. to qualify themselves for the M.B B.S., is emphatically of opinion that the regulation passed by the Academic Council of the University of Madras at its meeting held on 14th March 1931 is highly impracticable and nullifies its object in as much as the passing of the Intermediate Examination is an unnecessary proviso and insuperable impediment, and requests the Board of Studies and the Academic Council of the University of Madras to reconsider its resolution and allow the L. M. Ps. who have undergone the full course in Medicine, Surgery and Midwifery and acquired a general proficiency in those subjects to undergo two years course in a recognized Medical College and to appear for the M. B. B. S examination".

Dr. C. V. Narayana Iyer seconded the resolution. A discussion ensued about the desirability or otherwise of insisting on the general educational qualification, in which several members took part, After a full discussion the resolution was put to vote and all voted for it without a dissentient voice.

The following resolution was then moved from the chair :—

"This Association records with extreme regret the sudden and untimely

demise of Major Khandawallah, I.M.S., a sympathetic officer of Cannanore Central Jail and very popular figure in the District and desires to convey to his family the extreme sorrow felt by this association".

The resolution was passed unanimously, all members standing.

Dr. C. V. Narayana Iyer then moved the following resolution, which was seconded by Dr. J. Herbert and passed unanimously all members standing.

" This Association learns with deep sorrow the loss that Rao Saheb Dr. A. Gopalan has sustained by the passing away of his wife and desires to convey to him and his two sons, who are members of this Association, our deep condolence "

The meeting terminated with votes of thanks proposed by Dr. V. Krishna Menon, the Secretary, to the President and the proprietor of the Paran Hall.

---

## Ultra-Violet Radiation.*

By V. C. Sudarsanam, L.M.P.,

*Madras.*

The Sunlight forms the natural source of ultra violet radiation. The value of Sunlight has been realised by mankind from the earliest of times. The Isrælites, Egyptians, Arabians, Syrians, and Romans are all mentioned in the Bible as having worshipped the Sun. Even to-day the Sun is worshipped by the Persians, Mohammedans, and Parsis; while it is known to everybody that the Hindu begins each day by prayers and thanksgivings to the Sun, as the giver of light and fertility. The well-known Sunday is so called because it is dedicated to the Sun.

Since these early years of the Christian Era, until in quite recent years, we have entirely failed to make use of the knowledge gained and handed down to us by those older civilizations. But to-day we are entering into a new era in which natures' forces will be more properly understood and will be marshalled into use.

Hippocrates, the father of modern medicine, about (400 B. C.) practised in the island of Cos in the Greek Archipelago. He established a health temple to Aesculapius, God of the Sun, Medicine and Music. The priests in charge of the temple who were also physicians used the natural agencies of air, light and water in the cure of diseases, and the pursuit of both physical and mental culture. The beauty of the classic Greek form, both male and female has not been equalled since.

Since the decay of the Greek and Roman empires and up to about 50 years ago, the virtues of sun and air were forgotten.

In 1889, Widmark showed that it is the ultra violet rays in the sunlight that cause erythema and pigmentation. It was Finsen, who in 1893, published his early experiments on the Physiological action of Solar radiation and the rays from Arclamps, and announced the results of his treatment of tuberculosis of the skin by means of the " Finsen Light."

On 1st May 1900, Finsen Light treatment was introduced into England.

In 1902 Bernhard of Samaden treated wounds and tuberculous lesions with sunlight.

In 1666, Sir Isac Newton, discovered that sunlight is composed of many different colours—Red, Orange, Yellow, Green, Blue, Indigo and Violet. In 1800, Sir William Harschel working on Newton's experiments noticed that when he placed the bulb of a thermometer beyond the limit of the visible red rays the temperature continued to rise, and

*Read before the South Indian Medical Union, Madras.

proved the existence of invisible radiant energy. These rays owing to their position in the spectrum were named " Infra Red " rays, and because of their properties they are also known as Heat Rays.

In 1801, Ritter found that silver Chloride was blackened by invisible rays situated beyond the violet region of the spectrum and concluded that some other invisible radiant energy is present in the ether. To these rays he termed the " Ultra Violet ", owing to their position in the spectrum. It is this portion of the sun's radiant energy that exerts the greatest therapeutic influence. The solar spectrum can be divided into two main portions, namely, visible and invisible. The visible spectrum is composed of the seven colours, red, orange, yellow, green, blue, indigo and violet, one colour gradually fading into the next.

Visible light can cause three different effects, *viz.*, heating, illuminating, and chemical effects. Thus in sun-light there are some heat rays that are visible—and some—the infra red—that are invisible; and there are also some chemical rays that are visible—and others the ultra violet—that are invisible.

" Ultra violet radiation can be considered as formed of invisible rays whose frequencies are greater than those of the visible spectrum."

There is a great diversity of opinion as to whether natural sunlight or artificially produced ray is of the greater therapeutic value, but all are agreed that sunlight, together with pure fresh dry air free from dirt and smoke, such as can be obtained in high altitudes is better for general treatment than doses of artificially produced rays administered in the physician's clinics.

Impurities in the atmosphere, such as smoke, dust, though very minute generally absorb all the ultra violet rays. Diffuse sunlight contains a large proportion of ultra violet rays. Reflection increases the diffusion of light; hence an ideal place for natural ultra violet radiation will be near large expanse of water or above stretches of snow.

An analysis of sun's radiation shows that it contains :—

| | |
|---|---|
| Infra red rays | 80 per cent. |
| Luminous or light ray | 13 per cent. |
| Ultra violet rays. | 7 per cent. |

### Chemical and Physical Properties of Ultra Violet Rays.

Chemical reactions may be divided into reactions of degradation, synthetic reaction and double decomposition. A typical example of the degrading effect of light is when Hydriodic Acid is exposed to sunlight, the acid splits into Hydrogen and Iodine. It is because of this reaction that the acid is always stored in coloured bottles. If plates of silver, copper, tin, or lead, are suspended in water and exposed to ultra violet radiation, Colloidal solutions are formed. In the presence of light Chloroform is converted into Carbonyl Chloride (Phosgene) and Hydrochloric acid. A striking example of reaction of synthesis is the formation of Hydrochloric acid by the photo chemical combination of Hydrogen and Chlorine.

Halogenation or the introduction of halogen into organic chain compounds is probably the most valuable technical application of ultra violet rays to induce or assist chemical action. Methane may be chlorinated to give successively Methyl Chloride, Methylene Chloride, Chloroform and Carbon tetra Chloride.

Amongst the various physical properties of the ultra violet rays we are

more concerned with the absorption phenomena. Ozone absorbs ultra violet rays very strongly. It is present in very high atmospheric regions where it helps to shield the world from excessive ultra violet radiation. Water, smoke and dust particles all absorb ultra violet rays and this is the reason why the sun's rays in plains are so weak in ultra violet ray content. Fluorescent solutions and solids are opaque to the rays. Tap water absorbs a fair quantity of ultra violet rays while distilled water does not.

*Glasses.*—The thickness of the glass and its chemical composition are important factors to determine the transparency to the ultra violet rays. All glasses that contain metals of high atomic weight absorb most of the rays. Common glass absorbs all rays up to 2950 A.U. In this connection it is worth while to know something about the much talked of " Vita Glass". This glass was originally discovered by Lamplough, and he called it the "Vita" Glass. This glass contains a large proportion of Quartz and other ingredients that are not found in other glasses. This transmits rays up to 2750 A. U. and as such contains most of the ultra violet rays present in sunlight. It is because of this property that it is being used in many of the modern hospitals and sanitoria.

*Reflection of ultra violet rays.*—Considerable absorption takes place when ultra violet rays are reflected. Snow reflects ultra violet rays extremely well and this accounts for the development of snow blindness under certain conditions. Partial eclipse blindness is similarly due to the presence of ultra violet rays of short wave length.

*Fluorescense.*—In the presence of ultra violet rays a lighted candle glows a bright blue, sodium salicylate exhibits a strong violet fluorescence, quinine sulph, light blue etc.

Liver shows an intense yellowish fluorescence, suprarenals, an orange red, and cerebral cortex, a yellow. Ultra violet rays when passed through a filter containing the oxide of nickel affords a means of diagnosing small spreading ring-worm of the scalp and of accurately determining the extent of the scalp infection.

It is of greatest importance in distinguishing pearls : Japanese cultivated pearl gives a yellow fluorescence, oriental pearl bluish, artificial pearl no fluorescence. Fresh eggs give a reddish fluorescence, stale eggs a dirty violet fluorescence. It is also used in examining the old Parchments to estimate their age.

*Biological Effects.*—The following are the three principal theories advanced to explain the mode of action of ultra violet radiation.

"(1) That the autonomic nervous system is directly influenced by the stimulation of the nerve ending in the skin, the nerves being stimulated by the oscillations of cells. There may also be direct photo-electric action on nerve endings. Dixon thinks that this nerve stimulation is due to fluorescent substances, such as quiniodine that occurs in the skin."

"(2) That the rays are able to penetrate as far as the capillaries of the corium, and that they are absorbed by the blood, where changes occur leading to widespread systemic reactions."

"(3) That some substance formed in the epidermis acts as a hormone."

Some believe that the skin fat is rendered photo active by irradiation; the body certainly has a curious characteristic s ι ell, rather like that of burnt horn, after exposure to ultra-violet radiation,—probably because of some chemical action taking place on the skin surface. Certain workers in

this field consider that ferments are formed by the destruction of the superficial cells, while others thnik that some substance is formed from the breaking up of the Chromatin bands. of the cell nuclei, or electrical state of protein is altered by ultra-violet radiation, there being a change in Hydrogen Ion concentration. The biological effects of ultra voilet radiation on the skin is most marked. Nothing is felt by the patient during the exposure except a slight sensation of warmth due to the incandescence of the burner. There is no evidence of redness or other signs of inflammation at the time of the treatment. After a latent period of usually from 4 to 8 days, which is by no means constant, a feeling of heat is experieneed by the patient. If the intensity and duration of radiation was sufficiently long and continued this feeling of heat increases and leads to much irritation. In this stage the irradiated part shows signs of feeble inflammation. This stage lasts for a few days depending entirely upon the dosage of the rays and sensitivenesss of the patient.

Continued irradiation of the skin produces pigmentation. There is usually a fall of blood pressure after irradiation probably because of the Vasodilation which follows the Erythmea or because of sympathetic paresis.

Russel records a case where a fall of 20 m.m. of mercury occurred 5 minutes after irradiation by the mercury vapour lamp at 36 inches distance. Under the action of ultra-violet rays of immunizing power of the body is increased due to the formation of anti-bodies in the blood. Diarrhoea and bronchitis so frequently met with in rickety children are well controlled by general irradiation. Ultra-violet rays have an analgesic effect. This effect is supposed to be due to the action of riradiated inter-epithelial nerve fibrils. Sometimes a deep seated visceral pain is allayed by its application.

*Effects on the skin.*—The skin has got a protective function to perform, and this action is aided by the sebaceous matter that it contains. Regulation of heating mechanism of the body is done by it through the sweat glands. It is one of the important excretory organs, aiding in the elemination of waste products of metabolisim such as, lactic acid, urea and carbon dioxide. The various antibodies are also formed in the skin. It forms one of the channels for nutrition, for example Inunction of cod-liver oil, olive oil, etc. The skin is able to discriminate peripheral heat and cold, pain and tactile sensations. It protects the body from excessive ultra-violet radiation. It is the site of the activation of hormones and vitamins. It is a highly sensitive organ and its condition can change or influence central nervous system. Example, shock after an extensive burn. Ultra-violet rays of shorter wave length are much absorbed by the skin. All rays shorter than three thousand are absorbed by a layer of epidermis, 1 m.m. in thickness. Ultra violet rays are capable of penetrating the capillaries of the skin. Blood serum absorbs all rays below 3000 A and normal blood all rays with wave lengths less than 4500 A. Certain changes take place in the skin as a result of the absorption of ultra-violet rays. It has been proved that these rays convert the cholestrol in the skin into vitamin D which stimulates calcium, iron and phosphorus absorption. Pacini and others have found that there is at first a period of vasodilatation, which is soon followed by vaso constriction if irradiation is continued. Short exposures cause vosodilatation and longer exposures cause vaso constriction.

*Erythema* in, one of the most important phenomena occurring in actino

therapy. Erythema due to ultra violet ray radiation always appears after a latent period. Fair people react more strongly than dark people. It is difficult to produce erythema in infants and over-doses of rays must be identified by the following symptoms, viz., loss of weight, insomnia, and increased irritability.

Certain microscopic changes take place in the skin after irradiation. Russel says that on microscopic examination the irradiated skin reveals serous swelling of the deeper layers of the epidermis, the cell nuclei of the granular and malphigian layers being especially affected. Vesicles form and there is a migration of leucocytes into these two layers. The diameter of the capillaries increases to from two to four times their normal size. The blood stream slows down till it comes to a stand still in affected area. 24 hours later, there is active diapedesis from the non-thrombosed vessels with marked odema, and the reaction is at its height about thirty hours after exposure. When the exudation is sufficiently great to break continuity between the Stratum Corneum and the Stratum Granulosum, blisters occur. The thrombi in the superficial vessels are removed by phagocytes. Some days later if the exposure has been sufficiently powerful to cause necrosis of the epidermal cells, desquamation results.

*Pigmentation.*—This occurs only when there has been a preceding erythema. In therapeutics the appearance of pigmentation necessitates the administration of longer exposures. All rays between 2,900 A and 3,300 A are capable of producing pigmentation. Pigmentation ensures the minimum amount of ultra violet radiation and therefore increased therapeutic action. The colour of the pigmentation varies according to the source of radiation. Thus carbon arc lamp gives reddish brown, mercury vapour lamp a more greyish colouration.

Ultra violet rays confer immunity against skin diseases like acne, boils etc. Lack of ultra violet irradiation for the skin gives rise to avitaminic condition.

*Effects on Bacteria.*—Many of the bacteria are killed by the direct action of the ultra violet rays. Mere heat alone does not kill the bacteria. In 1890, Robert Koch showed that tubercle bacilli were killed by exposing them to sun-light for ten minutes. Waves of *2960 A and 2100 A* are responsible for the bactericidal activity.

Ultra violet rays are absorbed by the protoplasm of the organism, and in the wound one bacterium will protect another lying under it, so much so in irradiating a wound for example lupus, the beneficial effects are more due to the increase in the bactericidal effects of the blood than the direct action on the bacterium.

*Cardiovascular System.*—During general irradiation of the body there is dilatation of the surface capillaries and a comparative disengorgement of internal viscera and vessels results. In patients with high blood pressure the blood pressure is reduced after irradiation and that relieved a great deal of the symptoms. In patients with heart lesions, the dilation of the surface capillaries, induces lowering of blood pressure and consequently the heart's work is lessened and dyspnoea is often relieved.

*Effects on Blood.*—Profound blood changes take place during irradiation. Blood serum and blood corpuscles absorb all rays less than 4500 A. How this energy is stored and carried is not yet well understood. But it is sufficiently proved that vitamin D is formed at the surface and carried to the interna organs by the blood stream. There is

a slight increase in the red and white cells and in hæmoglobin; diminution in the polymorphonuclear lencocytes; and an increace in the lymphocytes, and most markedly of all in the eosinophilic cells. It is also known that the immunizing and bactericidal properties of the blood are increased, but the connection between these and the changes in the differential white count is not obvious, because it has always been thought that the polymorphos had the greatest bactericidal effect, and yet they are both actually and relatively decreased.

*Effects on Metabolism.*—Exposure to ultra-violet rays influences carbohydrate, fat, protein and mineral metabolism, but the exact process of its action is little understood.

*Effects on Muscular and Skeletal Systems and growth.*—Texture of the skin rapidly improves under irradiation. Flabby and wasted muscles soon regain their normal tone.

*Calcium Metabolsim.*—There is an increase in the calcium content of the blood, and also an increase in the concentration of inorganic phosphorus, and it is due to these changes that Actinic therapy is so useful in the treatment of rickets. Calcium salts have a tonic action on the heart and an increase in the blood calcium has a stimulting effect on the heart. They stimulate the peripheral circulation and are responsible for vasomotor stability. Because of this property they are of value in the treatment of erythematous rashes. Adequate amount of calcium in blood is necessary in cases of bleeding to ensure clotting of the blood. Often the amount of secretion is reduced and latarrh relieved. The phagocytic action of the leucocytes are stimulated and aid the absorption of exudates. Calcium salts reduce anaphylactic reactions. They improve the emotional tone and control the nervous and muscular irritability. Calcium and phosphorus are influenced by the rays of 3,022 A to 2,600 A. Irradiation should not be given, with the patient at a shorter distance than 36 inches from the lamp.

*Effects on the Eyes* —Rays between 7,600 A and 3,800 A are capable of penetrating the crystalline lens of the eye. These rays are thought to produce chemical changes in the visual cells and the new product formed acts as a stimulant. All rays of 3,080 A to 2,950 A are absorbed by the lens and cause it fluoresce; and acts as protection to retina. The Cornea is most sensitive to ultra violet rays, all rays below 2,950 A being absorbed by it. Cloudiness of the cornea and desquamation of the epithelium results from exposure to ultra violet rays. The conjunctiva is also affected. These superficial lesions, clear up without any permanent damage to the transparency of the cornea. Cataract is supposed to be caused by the rays of longer wave lengths namely, the red and the near infra red; and ultra violet rays are not responsible for this condition as they are absorbed by superficial structures.

*Effect on the Alimentary System.*—Beneficial effects have been noted in cases of vomiting of pregnancy after irradiation, probably because ultra-violet rays diminish the acid contents of the stomach. Reflex contraction of the involuntary muscles occurs under irradiation and this property has been tried in some cases of constipation with benefit. In these cases the action is brought about through the stimulation of the sympathetic system. Loss of appetite is sometimes relieved through stimulation of digestive glands under irradiation. Microbic infection of the bowel is decreased and thus many forms of diarrhœa can be controlled.

*Effect on the Nervous System.*—There is a well marked mental stimula-

tion through its effect on the central nervous system. It also adds on the peripheral nervous system and has an analgesic effect. Through the sympathetic it influences the action of the endocrine glands, Nervousness disappears and Insomnia is banished. The analgesic effect of the rays is more pronounced with the carbon arc and can be readily seen when cases of Herpes, lumbago, or neuralgia are treated.

### Conditions in which Ultra-Violet Radiation has been tried.

The biological effects of the rays must be well understood before selecting cases for radiation. The ultra-voilet rays are absorbed by the blood, and thus conveyed throughout the whole body. The general effect is undoubtedly an increase in the rate of general metabolism, the appetite is sharpened, the resistance of the body is increased: hence the value of this treatment after acute illness cannot be overestimated. The number of micro-organisms that infest the intestinal tract is lessened, absorption of food is facilitated, and catarrh is lessened. Many obstinate cases of auto-intoxication from the intestinal tract have been relieved. Anæmias are aided by stimulation of the hæmo-poietic system and increase in hæmoglobin, rickets from the increase of calcium and phosphorus in the blood and surgical tuberculosis and many infections by the bactericidal power of the blood, the lymphocytosis of dental resistance. Many on the continent consider ultra-violet radiation valuable for its rejuvenating properties, probably because of the stimulation of the endocrine glands markedly the thyroid and sexual glands. Of late great value for ultra violet radiation in Dermatology has been claimed.

After all is said, no single therapeutic agent can be a panacea. Each has its own place in medicine, and a new method of treatment is brought into disrepute only when extravagent and unsubstantiated claims are made for it. Physiotherapy has got its own appropriate use in medicine. It is certainly not to be claimed that ultraviolet radiation is the only method of curing diseases, but undoubtedly in a few conditions its action is specific, and it is able to effect a cure where other remedies have failed. However, it is certainly a valuable adjunct to other methods of treatment.

By virtue of ultra-violet rays properly and sensibly applied the dangers of motherhood in bones robbed of their salts, and teeth loosened in their sockets will be unknown. There will be no fear of children weakened in essential bone formation. Sunshine effect in bottles, cans and pills—sunshine by proxy—is due to that vital invisible rays-the 'light which shineth in darkness.'

### References.

(i) Ultra Violet Rays in the treatment and cure of disease—*Percy Hall.*

(ii) Ultra Violet Radiation and Actinotherapy —*R. H. Russel and D. K. Russel.*

(iii) Light Therapeutics—*Kellog.*

(iv) American Medicine, June 1929. "The light which Shineth in Darkness" *Herman Goodman.*

(v) Treatment of skin diseases modern treatment Series—*Jonathan Cape.*

(vi) International General Electric Co. (*Chart*).

## Two Domestic Pests.

By Capt. R. C. Toyle, L.M.S.,
*Madras.*

While anxiously interested in contributing something or other useful towards the advancement of medicine and surgery we are, I am afraid, neglecting the insects and parasites, our deadly enemies, to a large extent. We are living amongst them and we ourselves come under the category of parasites to a considerable extent. Living as we do we are compelled to expose our body to the blood-thirsty surroundings. Even some of the insects much bigger than the mosquito or the bed-bug which are thought to be harmless and useful in destroying many little flies and insects are becoming harmful as civilization advances. Perhaps this may be due to the fact that the cleanliness of the present day Indian houses prevent these insects from getting the usual food of their ancestors or that the copied Western system of living are creating more parasites harmful to us. It would have been a great blessing if such insects were satisfied without blood without infecting it with curious and dangerous organisms which bring on peculiar diseases. All of us know about many little parasistes and the harm and havoc done by them. I am therefore sure a little time spent in the study of insects and trying to isolate new and dangerous organisms will also be as useful a research work as those done in other branches of Medical Science.

I find by constant observation and experiments that we can include the Cricket (Gryllus Domesticus) and Silver-fish (Lapismatidae) also amongst the parasites that feed on human blood.

Gryllus Domesticus (the Cricket) belongs to the order Orthoptera. It has a dirty brown colour. This family is the specialized offshoot of the Tettigonidae the fifth group amons Orthoptera, the other four being Blattoidea, Phasmatoidea, Montoidea and Acridioidea. Gryllus Domesticug has three pairs of legs; the hind legs being long, big and specialized for jumping. These have black spots and stripes on legs and body. The tarsi are three segmented. The ears are placed as in the other varieties and the song of the male is produced in the same way but the tegmen has a well-developed file formed of short cross-ridges. It differs from the mole-cricket and the other kinds that live by burrowing holes in marshy places. This lives under picture frames, clothes and in the corners of doors and windows. We have hitherto known this only as destroyer of clothes put away for some time, wall paper and bound books containing gum and other little insects. This is also fond of oil and grease as is evident by its presence inside the hats and caps of people who use hair oils and pomades regularly. However, this seems to have changed the old order along with the present day Indian housekeeper. Necessity is the mother of invention and naturally when the usual food is not available this ugly insect has started to feed on human blood. In this connection I must remind my readers that the mole-cricket is considered to be carnivorous, feeding on animal blood. This variety is a powerful cricket which has very strong fore-legs suitable for digging and grasping. This also infects dogs which attack it with something which brings on frightful nervous prostration, laryngeal troubles and eventually death. As we are not concerned with the mole-cricket now we will leave it alone. Gryllus Domesticus can be easily identified by its powerful hind-legs. It attacks us only when lights are out. Before attacking, the male makes a peculiar shrill noise which we may call a song with peculiar notes which lulls us to

sleep. It waits till we are quiet and brings out the little ones also to feed on our blood. It is wonderful how these disappear the moment we move gently or make a noise. The parents drive away the little ones to particular hiding corners the moment they know we are awake and they stand out in prominent places away from us. They try to escape by long leaps only when lights are on. These little "leapers" are rathers quick in work and seem to hear very well. They sing with a motive and do respond and warn. When we put out the lights one of them starts singing again and after it finishes the song we can hear the peculiar notes d y i ng out slowly (perhaps as Nature has taught it), one by one they jump towards us to start the attack and feed. This process was repeated by these insects from 10 p.m. to 2 a.m. during the nights I kept awake to study their movements. In the course of a week I succeeded in killing only four of them and collect the fresh blood they drank from the dorsum of my hands and cheeks. The punctures they make seem to heal easily although they carry away a part of our skin also. However, further study and investigation are necessary to find out how far they are harmful.

Lapismatidæ (the Silver-fish) is another insect which does the same but without singing. This believes in attacking single handed. It belongs to the order Thysanura, the sub-orders being Ectotropica and Entotropica. It is supposed to be the most primitive of living insects without metamorphosis and wings. It has a soft integument with hairs or scales. This is one of the four varieties the others being Machilidæ (lives on rocky and mossy places) and Japygidæ (lives in soil).

Lapismatidæ usually has ten to twelve segments with three long tails. Head contains compound eyes, small or absent. Ocelli may be present or absent. The Antennæ are elongate, filiform or monoliform. They have mandibles with hard t e e t h. One particular kind which has spots and stripes on the body has three pairs of legs, spotted also. This kind is very quick in movements and seems to be more fond of human blood than the others. It has more or less elongated body dorso-ventrally flattened, covered with scales or hairs. One variety, Lapisma Saccharina is abundant in Europe and New Zealand. They usually gnaw paper and books containing gum. Lapismatidæ also with its own instincts attack us only when lights are out. We generally find one, rarely two attacking us. The moment we are awake it gets to the nearest wall and goes straight up beyond our reach before it stops, so much so, by the time we switch on the light it will be high up on the wall standing still to be unnoticed. I have managed by means of ladders to get at and kill two of these at minnight (in the course of a week) and collect the fresh blood drawn out of me. This also requires further observation and experiment.

Are we not living in a treacherous world where selfish motives create more parasites? Now let us for a moment think whether t h e s e are harmless or not. My experiments so far have failed to isolate any micro-organism which undergoes the sexual or a sexual stage in these insects. However, further research will help us a lot in finding out if these are the causes of some fevers unknown origin, or of peculiar skin disease in the tropics or even for Kala-azar.

I hope my readers will pardon me for introducing this little insectpest into this journal and that brothers and sisters of my profession, especially bacteriologists will take this up and work on the little information I have given here to help towards conclusive experiments which might prove useful to the medical world hereafter.